



February 1993

New Feature!! Monthly Events Calender Page 6



Pikes Peak Radio Amateur Association, Inc. P. O. Box 16521 Colorado Springs, Colorado 80935 FIRST CLASS MAIL







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ZERO BEAT is published monthly in the interest of the members of the Pikes Peak Radio Amateur Association, Inc., P.O. Box 16521, Colorado Springs, Colorado B0935. For membership and subscription information see last page of this publication. The Pikes Peak Radio Amateur Association meets on the second Wednesday of each month at the Elk's Lodge, 3400 North Nevada Ave. at 7 p.m.

EDITOR: Ron Deutsch NKOP 4305 Ridgelane Drive, Colorado Springs, Colorado 80918 (719) 593-8352.

Deadline for submission of articles or ads is the 21st of each month. Submissions may be sent to the editor or to the club mail box. Permission to reprint articles is granted provided credit is given to both the author and this publication.

ADVERTISING RATES: Full page \$48; half page \$24, quarter page \$12, business card size \$6. These are monthly rates and are billed quarterly. Send your ad requests and payments to: P.O. Box 16521, Colorado Springs, CO 80935.

From the Editor...

This month we are starting a monthly events calendar. I have had numerous requests for a calendar over the past year. Many of the newsletters we get on exchange have a calendar and each takes a different style. Because our newsletter comes out in the middle of the month we must include the next month's calendar with each issue. This will also give us a chance to update it before it becomes the current month's calendar.

Please lock carefully at the calendar on pages 6 and 7 of this issue. Let me know your comments both positive and negative. After several issues I will change the calendar to whatever format the majority of users likes. For example, should it consume 2 pages of this publication? What kind of information should it include? How for in advance should it go? Let me know you thoughts by phone, letter, or packet message.

If you want your event listed I will need it by the 21st of the month prior to your event. If you have a recurring event (such as a net) I can easily put it in each calendar cell each time it occurs. Please check this issue carefully for accuracy. This can be a great way to get the word out. Let me know if you think it is worthwhile. Tox and 73

Ron, NKØP, Ø-Beat Editor

Great Radio Lies

by Pete Kemp, KZ1Z

- I'm from the FCC and I'm here to help.
- I never run excessive power.
- I fixed it right the first time. It must have failed for some other reason.
- You're 5 by 9. Please repeat my report.
- We shipped your new linear yesterday.
- All you have to do is follow the manual.
- No need to look it up; I've got it memorized.
- It's a quick job; we'll be home for lunch.
- I thought you brought the connectors!
- 1 QSL 100 percent.
- Sure you can test the high voltage. Just grab the wire fast, with one hand.
- You can't burt it. Just tune up and look for smoke.
- It must be the repeater; my station is fine.
- You sound distorted, too. What's an up-5 switch?
- I never use a DX packet spotting network.
- I don't work DX on list operations.

from the October '92 'USAF Mars Kentucky Newsletter'—AFA2OQ Editor

PPRAA General Meeting Jan. 13, 1993

Correction to last month's minutes. The ordinances referred to in last month's minutes were city ordinances, not county ordinances.

Treasurer's report:

Previous Balance; 983.80 Income; 265.00 Bills; 1079.80 New Balance; 169.00

Education - There have been requests for a repeat of the novice/tech course. Instructors are needed. The time commitment would be for three hours for two nights per week for six weeks.

VE testing - Exams will now be held every other month on the 2nd Saturday of that month at Denver Tech Center (across from the 7-11 Velodrome.

RACES - The next training session is scheduled for April 10. There will be another session in October.

ARES - A meeting of the Assistant Emergency Coordinators will be scheduled. A Spring or Summer exercise will be scheduled.

Public Service. Up-coming events are:

Mar. 27 MS Super Cities Walk Apr. 17 Project Concern Walk for Children

Apr. ? March of Dimes
July ? Pikes Peak Hill Climb
July 31-Aug 7- World Police and Fire
games

35-40 people are needed for the Walk for Children. Call 636-1290 for more information.

Skywam - There will be an early training session this year.

CCARC - The next meeting is in Denver in mid April. A co-delegate is needed. Contact Oak KØROL.

O Beat - A monthly calendar will be started with the February issue. Contact Ron prior to the 21st of each month if you want something added to the calendar.

Swap-Fest - The date is May 15. The location is the City Auditorium. Tables will be rented for \$10.00. Contact N7ØGL 637-0704 for table rental.

Bob Nieman NØRAQ of the Falcon Wanderers is looking for Club members interested in the activities of this club. Volunteers are also needed for the America the Beautiful Celebration, July 22-25.

Lewis Palmer Middle School is having a technology fair on Feb 22 from 6-9pm. Hams with portable equipment are needed. Lewis Palmer is also having a Saturday science program on Feb 27.

Ivan in formed the Club that QST will print an article about the Club's assistance to Memorial Hospital last March when the telephone system went down.

Jake NØCYR with assistance from Mike KØTER gave a demonstration of message passing procedures.

Hammy was awarded to Jake NØCYR
Home Brew Night activities followed the
General Meeting. The winners were:

3rd Ted NØNKO 2nd Tom NØNTX 1st Mat KC4KGS

The meeting was adjourned at 9pm

Submitted by Liz NØTUK
PPRAA Secretary

Board Meeting Jan 17, 1993

The meeting was held at the QTH of Harv WB6YXD. The following members attended: Luci, NØOUD; Mallory NØIKF; Tom NØNTX; Harv WB6YXD; Ken NØNKP; Rosie WBØMNL; Steve WB7VHR; Steve, KØCI; Mike KØTER; Ron NKØP; Liz NØTUK.

The meeting was called to order at 3pm by President Luci NØOUD.

The Board discussed gift certificates from McKay's Steak House, OEM and Village inn.

Rosie suggested that any Club member be allowed to host a Board meeting at his/her home. This was dine successfully in the past.

Ron passed the new Ø Beat calendar around so members could review it and add

Dits and Bits

For Sale:

Icom 701 HF tranceiver, 10-160 mtrs w/matching power supply and Icom SM-2 desk mic. \$400,00 contact Dennis N7OGL 630-0704

For Sale:

Icom IC-04AT w/ BP-3, rubber duck, walkie ground plane, and BC-40 charging stand. \$200,00 Harvey, W1JU, 599-8604

Wanted:

Manufacturing engineer needs job. 16 years experience in electromechanical manufacturing and design. If you know of an opening please contact Harold Wright, NØOPN, 593-2042. Temporary or permanant positions considered.

For Sale:

Excellent condition Hammarlund SP800 all band communications receiver \$175. Viking II transmitter 100 watts AM circa 1950 10-160 mtrs. \$100 Harry WAØTHB 473-8144

For Sale:

Kenwood TS-820S and VFO-820 excellent condition. Bob, KB7CAY, 260-8798

For Sale:

PC AT (80288) with VGA monitor, Panasonic printer, 80 meg HD, 2-floppies, 1 meg RAM, mouse, much software. exc. condition, \$595 or may trade for Ham gear, Ron, NKØP, 593-8352

Swapfest Information

March 7, 1993

ARA Swapfest and Convention, Adams County Fairgrounds 8am to 2pm, Contact Judi, WDØHNP 450-6910 or Steve, KBØJB 360-0807.

May 15, 1993

PPRAA annual Hamfest, Colorado Springs City Auditorium, Contact Doug, N4TGO, 495-9346

continued from page 3

pertinent items to it. \$20,00 was requested and authorized by the Board for the purchase of materials needed to publish Ø Beat.

We have received the Raffle License from the State. The license was given to Rosie.

The Treasurer will attempt to find a bank that does not have a service charge on accounts. The Treasurer also requested and received approval for the purchase of envelopes and ink.

Rosle suggested that the Club continue to give the Elks Club a \$50.00 quarterly donation instead of glvlng a \$200.00 sum once a year.

The checks for the Home Brew Night winners will come out of the raffle fund.

It was verified that the \$100.00 for the Skywarn fund had been paid back.

There will be a Skywam training class on Feb 13 at 1pm at the Office of Emergency Management.

The proposed City Ordinances related to Ham Radio were discussed.

The Board voiced no opposition to placing requests for job information in 0 Beat.

Mike KØTER requested and received permission from the Board to use the Club call sign for a packet radio node.

The advertising and prizes for the Swap Fest were discussed.

It was proposed that the novice/tech classes be put off until next year because the time commitment is now too much for most Club members.

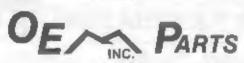
Sites for Field Day and the Club picnic were discussed.

The technology fair and the science program at Lewis Palmer Middle School were discussed.

The next Board meeting will be at the QTH of Ron and Liz (NKØP, NØTUK) on Feb 11 at 7pm.

The meeting was adjourned at 4:10pm

Submitted by Liz NØTUK
PPRAA Secretary



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February 1993 PIKES PEAK RADIO AMATEUR ASSOCIATION



SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	7:00pm ARES NET 146.97 7:30pm RACES NET 146.97	3	4	5	6
COLORADO ARES NETS 6:30pm RACES HF NET 3990.5		7:00pm ARES NET 146.97 7:30pm RACES NET 146.97	10 7:00pm PPRAA MEETING	11 I1:30am ACADEMY RADIO CLUB 7:00pm PPRAA BOARD MTG	12	9:00am VE TESTING 1:00pm SKYWARN CLASS (WB7VHR)
COLORADO ARES NETS 6:30pm RACES HF NET 3990.5	ī	7:00pm ARES NET 146.97 7:30pm RACES NET 146.97	17 MARC MEETING	RACES TRAINING OM/YL LUNCH BUNCH	19	20
COLORADO ARES NETS 0-BEAT DEAD- LINE 6:30pm RACES HF NET 3990.5		7:00pm ARES NET 146.97 7:30pm RACES NET 146.97		25	26	27
COLORADO ARES NETS 6:30pm RACES HF NET 3990.5		3 4 5 5 10 11 12 13	y T F S 1 2 7 0 9 14 15 16 21 22 23 28 29 30	S M 1 7 8 14 15 21 22	16 17 1B 19	20

MONTHLY EVENT CALENDER

March 1993

PIKES PEAK RADIO AMATEUR ASSOCIATION

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	7:00pm ARES NET 146.97 7:30pm RACES NET 146.97	3	4	5	6
COLORADO ARES NETS 6:30pm RACES HF NET 3990.5	8	7:00pm ARES NET 146.97 7:30pm RACES NET 146.97	10 7:00pm PPRAA MEETING	11	12	13
COLORADO ARES NETS 6:30pm RACES HF NET 3990.5	15	7:00pm ARES NET 146.97 7:30pm RACES NET 146.97	17 ST. PATRICKS DAY	18	19	20 SPRI- NG
COLORADO ARES NETS 6:30pm RACES HF NET 3990.5	22	7:00pm ARES NET 146.97 7:30pm RACES NET 146.97	24	25	26	27
COLORADO ARES NETS 6:30pm RACES HF NET 3990,5	1	7:00pm ARES NET 146.97 7:30pm RACES NET 146.97	31			

S	M	T	M	Ť	F	S
	1	2	3	4	6	8
7	В	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

_		-	April	_	_	_
S	M	T	W	T	F	S
				1	2	3
4	-5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

MONTHLY EVENT CALENDER

OM/YL Lunch Bunch

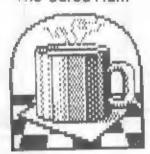
(Formerly GALS)

22 OM/YLs and their guests met on January 21, 1993 at the Country Harvest Buffet for a most delightful and pleasurable lunch.

A tour of the Tesla Museum followed, which was most enlightening and educational, as well as amazing.

The next meeting will also be held at the Country Harvest Buffet on Platte Ave. at 11.30 AM, February 18, 1993. Come join

73s anf 88s, Rosie Calloway, WAØMNL, The Cured Ham



Swapfest Boutique

Their will be a Boutique again at the PPRAA. Swapfest on May 15, 1993 at the City Auditorium. All Proceeds will go to the PPRAA, so start working on your crafts and collecting odds and ends to donate to the Boutique.

Faye Herren, KBØQI, will again be in charge, since she did such a spendid job last year. Her telephone number is 632-4574. More later.

Ø-Beat Collecters??

If any of you are saving old issues of our newsletter I have a growing pile of extra issues dating back 3 or so years. If you are missing any issues give me a call and you can complete your collection.

I am missing the following issues and would appreciate any help in locating them: Feb 91, Apr 90, May 90, Jun 89, Oct 89, Jun 87, Trix and 73 Ron, NKØP, Ø-Beat Editor

The Amateurs

There's something about them you've got to admire; They work for the love of the task, not for hire. Every one of them has the heart of a boy; What's a job to the drudge, to them is a joy.

While we our regular schedules are keeping,

Amateurs do without eating or sleeping.

They worry their spouses, so short seems their day. They don't get to bed when they shouldthey just stay-Sending their calls, catching calls from afar. And I think as I hear them how patient they are. How much better we'd work. if only we knew it-That Amateur spirit of wanting to do it.

Professionals worry and sometimes they shirk. 'Cause they're paid to perform, they see it as work. They begin with reluctance, they're glad when they're through, And they measure in money whatever they do. But the Amateur never begrudges a minute; He tackles the job for the joy that is in it,

So here's to the hamsthat brave-hearted throng-Though short be their waves, may their lives all be long. May the wisdom they gain and the joys that they reap Make up for the nights when they go without sleep. And may we, in that spirit of deep understanding Of work and its joy, keep our Amateur standing. -Edgar A. Guest

from the September '92 Sussex County (New Jersey) ARC 'Newsletter'-WB2LHY



Editor

Pacific	Mto	Cent	East	Sun	Mon	Tue	Wed	Thu	Fri	Sat	UTC
6 am	7 am	8 am	9 am	Sun	IVIOIT	Fast	Slaw	Fast	Slow	Jai	1400
						Code	Code	Code	Code		
7 am	8 am	9 am	10 am				Code B	Bulletin			1500
B am	9 am	10 am	11 am				Teleprinte	ar Bulletin			1600
9 am	10 am	11 am	noon	. 0				35			1700
10 am	11 am	noon	1 pm	7		Majal		avata.	-		1800
11 am	กออก	1 pm	2 pm	-		VISIU	ng Op Time				1900
noon	1 pm	2 pm	3 pm				IIIIIe				2000
1 pm	2 pm	3 pm	4 pm	Slow Code	Fast Code	Slaw Code	Fast Code	Slow Code	Fast Code	Slow Code	2100
2 pm	3 pm	4 pm	5 pm		Code Sulletin				2200		
3 pm	4 pm	5 pm	8 pm			Tele	printer Su	lletin			2300
4 pm	5 pm	6 pm	7 pm	Fast Code	Slow Code	Fast Code	Slow	Faal Code	Slow Code	Fast Code	0000
5 pm	6 pm	7 pm	8 pm			C	ode Bullet	in	-		0100
6 pm	7 pm	8 pm	9 pm			Tele	printer Bu	lletin			0200
648 pm	745 pm	845 pm	9 ⁴⁵ pm			V	oice Bullet	tin			0245
7 pm	8 pm	9 pm	10 pm	Slow	Fast Code	Slow Code	Fast Code	Slow Code	Fast Code	Slow	0300
8 pm	9 pm	10 pm	11 pm			C	ode Bullet	tin			0400
8 pm	10 pm	11 pm	Mdnte			Tele	printer Bu	lietin			0500
9 ⁴⁹ pm	10 ⁴⁶ pm	11 ⁴¹ pm	12" am			V	oice Bulle	lin			0545

□ Morse code transmissions:

Frequencies are 1.818, 3.5815, 7.0475, 14.0475, 18.0975, 21.0676, 28.0675 and 147.555 MHz.

Slow Code ≈ practice sent at 5, 7z\x, 10, 13 and 15 WPM.

Fast Code = practice sent at 35, 30, 25, 20, 15, 13 and 10 WPM.

Code practice text is from the pages of QST. The source is given at the beginning of each practice session and alternate speeds within each session. For example, "Text is from July 1992 QST, pages 9 and 81," indicates that the plain text is from the article on page 9 and mixed number/letter groups are from page 81.

Code bulletins are sent at 18 WPM.

☐ Teleprinter transmissions:

Frequencies are 3.625, 7.095, 14.095, 18.1025, 21.095, 28.095 and 147.555 MHz. Bulletins are send at 45.45-baud Baudot and 100-baud AMTOR, FEC Mode B. 110-baud ASCII will be sent only as time allows.

On Tuesdays and Saturdays at 5:30 PM Eastern time, Kepterian elements for many amateur satellites are sent on the regular teleprinter frequencies.

□ Voice transmissions:

Frequencies are 3,99, 7,29, 14,29, 18,16, 21,39, 28,59 and 147,555 MHz.

☐ Miscellanea:

On Fridays, UTC, a DX bulletin replaces the regular bulletins.

W1AW is open to visitors during normal operating hours; from 1 PM until 1 AM on Mondays, 9 AM until 1 AM Tuesday through Friday, and from 3:30 PM to 1 AM on Saturdays and Sundays. FCC licensed ameteurs may operate the station from 1-4 PM Monday through Friday. Be sure to bring your current FCC amateur license or a photocopy. Special arrangements must be made for weekend operation; please call or write at least a week in advance.

In a communications emergency, monitor W1AW for special bulletins as follows: voice on the hour, teleprinter at 15 minutes past the hour, and CW on the half hour.

Headquarters and W1AW are closed on New Year's Day, President's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving and the following Friday, and Christmas Day. On the first Thursday of September, Headquarters and W1AW will be closed during the afternoon.

Marconi Got the Kudos, but Three Yanks ...

When you flip on a radio, think Lee de Forest. As you scan the FM dial, praise Edwin H. Armstrong, While you eavesdrop on the airwaves, hail David Sarnoff.

Marconi didn't invent radio. These three did. Faceless and forgotten, they brought you everything from Franklin Roosevelt's "fireside chats" to Garrison Keillor's folksy broadcasts; they're the subject of a new book, Empire of the Air: The Men Who Made Radio, by Skidmore College English professor Tom Lewis.

Americans know Edison invented the light bulb, Ford created the assembly line, and Bell invented the telephone. But most believe Guglielmo Marcon; invented the wireless telegraph; he didn't. This innovation, the basis of the radio revolution, was sparked by de Forest, Amstrong, and mogul David Sarnoff.

De Forest, more a blunderer than an inventor, created the audion—the first vacuum tube. The audion made wireless reception practical. Armstrong, a single-minded genius, invented FM. Today's radios and television sets still use his tuning and detection methods.

Sarnoff—a gutsy, self-made executive—took de Forest and Armstrong's inventions and built one of the greatest business monoliths in U.S. history around them—Radio Corporation of America.

"Broadcasting is the single most important invention of the twentieth century," Professor Lewis says, "Radio was the first national medium, It was much more than a quaint precursor to television. Radio changed the interior landscape of the country in the same way Henry Ford changed the exterior landscape."

Information, ideas and entertainment, became common ground from coast to coast. Restaurants had to pipe in "Amos 'n Andy" every weekend at seven, or diners would leave. Thirty million listened to Charles Lindbergh's welcome-home celebration on their radios.

"Lindbergh's homecoming was the first 'national experience' we had," Lewis claims, "It was stunning, instantaneous we were there!" In 1977, half a century after that event, Lewis read a newspaper article on Armstrong, it told how Armstrong's reputation as the early genius of radio was eroded by patent fights with de Forest and Sarnoff. Lewis had never heard of Armstrong before but he soon became fascinated with the tragic, forgotten figure behind the radio revolution.

"The early-twentieth century story is about two lone inventors and an entrepreneur who appreciated the value of their inventions," says Lewis. "Sarnoff realized the implications of radio, and was willing to commit—to fund its development; that made him as important to the creation of broadcasting as the inventors of the technology."

Lewis began writing "Empire of the Air" in 1987. Ken Burns, who used Lewis as a consultant on his creation, The Civil War, and as a researcher and writer on earlier documentaries, quickly became tuned in to Lewis' subject and he began work on a companion film.

"I just got sucked into the drama of the story," Burns said in a telephone interview, "It's a dark, dark tale. We tend to fashion our own mythology in the twentieth century, but this story just shoots all your preconceptions to hell."

While Empire of the Air tells of the triumph of broadcasting, it's also a tale of failure and misery for the three men at the story's core. De Forest's inventions made millions for others, but he died with just \$1250 in the bank—committing suicide after four decades of patent fights.

Sarnoff maintained his grip on RCA and eventually won his battle to introduce color television, but he also lived long enough to see his beloved company lose its dominance of the industry. Without Sarnoff's guiding hand, RCA crumbled, RCA's old nemesis General Electric bought out its remains in 1985.

Telling the story of radio, a medium for the ears, on the visual medium of television presented problems for Burns. He tried to accentuate the aural aspect, using sounds from broadcasting's early days, along with voice-over interviews of people who had known the radio pioneers.

"Like judo, we turned a weakness into a strength," Burns said. "In lots of places I fade to black and force you to listen and remember how startlingly different radio was when it came along."

"The radio drama of Empire of the Air focuses on Armstrong," said writer-director David Ossman, "De Forest becomes the villain of the piece and Sarnoff is the good friend who eventually betrays the hero."

"I found in Armstrong's life a powerful American tale, a story of an inventor's tragic life—a story no one knew, not even those who worked in radio," Ossman said.

"It might soothe the healthy egos of all three to know they were the subjects of a television drama. But broadcasting today would displease de Forest, who wanted the airwaves to carry 'high culture' to the people" Lewis said, "But what de Forest considered high culture was really kitsch."

"Sarnoff, too, would be unhappy with the current state of broadcasting, now that his cherished RCA has lost its stranglehold on the industry," Lewis said.

"But Armstrong would be happy with radio, because FM finally won.

"As for television, none of the three would be impressed, though Samoff would rejoice that it's in color," according to Lewis.

"Empire of the Air has the elements of great tragedy—a hero, a villain, and a fool," Burns said, "Yet the lines are blurred, with Armstrong, de Forest, and Sarnoff each revealing heroic, villainous, and foolish traits," he said.

The historian's goal should be to tell a story that would make his subjects "wince a few times, be humiliated a few times, and feel proud a few times," Burns said. "Any incarnation of *Empire of the Air*—book, film, or radio drama would make all three men uncomfortable. And Armstrong might see that his life was not in vain."

-- from the Feb. '92 'NJDXA Newsletter of the North Jersey DXA



OPERATING EVENTS

Rick Brown - KDØSU

February 1993

7 - 8, Classic Radio Exchange, see January QST, pg 115. Put those vintage rigs on the air for a lot of fun.

13, North American Sprint, phone, see January QST.

20 - 21, ARRL International DX Contest, CW. See December QST for details.

26 - 28, CW World-wide 160 Meter DX Contest, phone. See December QST.

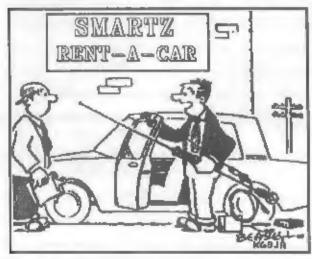
March 1993

6 - 7. ARRL International DX Contest, phone. See December QST.

27 - 28, CQ World-Wide WPX Contest, phone. See February QST, pg 109 for details.

VE Testing

The next VE test session will take place on February 13th at 0900. The test location is Denver Technical College, 225 South Union, Colorado Springs. That is across the street from Memorial Park. Pre-registration is preferred, but not required. Please note the exam fee has changed to \$5.60. The point of contact for this session is Rick, KDØSU, at 531-9423.



Since I'm going to have the car for a week do you mind if I punch a few little holes, here and there?

Local Ham Wins National Recognition

Mike Stansberry, KØTER, was "born at an early age" in Scandia, Kansas. He has been working for Hewlett-Packard for the last 15 years as an electrical technician.

Mike first became involved with the Pikes Peak Walk in 1975 when he walked with his daughter, Because of his interest in communications (Mike was first licensed as an amateur radio operator in 1959) he felt the need for communication on the Walk was critical. He offered the help of the Pikes Peak Amateur Radio Association because he felt it would enhance the Walk. It has proven to be one of the most valuable assets to this enormous Walk.

In 1980, Mike married Luci and immediately involved her with the walk. She became information chairman in 1986, Luci, NØOUD, has made that a very important part of the organization of the Walk.

Mike has proven to be invaluable for his dry sense of humor, his willingness to assist wherever needed, and his forthright sharing of concerns and accolades. Mike can always be counted on to be one of the first people there and one of the last to leave.

A very special thank you to Mike and Luci for their many, many years of service and caring to the Pikes Peak Walk for Children.

(from Celebration of Volunteers)

Committee Chairpersons

Publicity	Al Craig	594-928B
Membership	Les Borst	634-3995
Education	Al Sailey	597-8514
VE Testing	Rick Brown	531-9423
Interference	Bill Petty	591-2116
RACES	Doug Moloney	unlisted
ARES	John Chapman	635-1604
SkyWarn	Steve Westby	570-1070
Public Service	Mike Stansberry	636-1290
CCARC	Oak Stockton	570-7782
Club Trailor	Steve Westby	570-1070
Newsletter	Ron Deutsch	593-8352
Club Historian	Al Craig	594-9288
Swapfest	Doug Peris	495-9346
-		

PPRAA Annual Hamfest May 15, 1993 City Auditorium

Tables \$10.00

Associate Member

Chairman: Doug Paris, N4TGO, 495-9346

Tables, Dennis, N7OGL, 630-0704

Watch here for details!!!

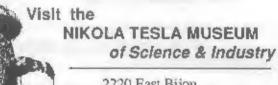
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